

LONG
BASKET ON 206L

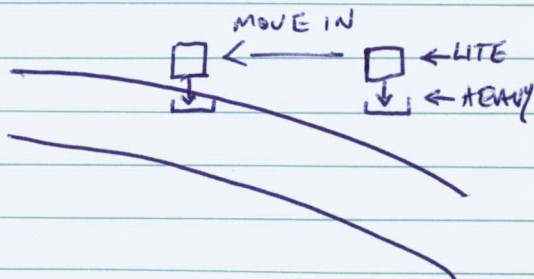
MOVE IN CLOSER?

① PILOT DOOR WOULD
HIT STRUT/LITTLE LEVER
AND LID EDGE ALL
AT ABOUT 5" INBOARD

② ARCH OVER AFT GEAR
X-TUBE AND SLOPED MESH
ANGLE IN MESH AS
IT IS NOW WOULD TOUCH
@ 4-5" INBOARD

THE TUBE OVER THE
SLOPED SECTION WOULD
TOUCH THE X-TUBE
@ 7-8" OR SO

BUT THIS IS ALSO
VULNERABLE TO WEIGHT
eg:



DISTANCE TO FUSELAGE
IS EVEN GREATER
NO PROBLEM THERE

PHOTOS

DSC-0051 THEN 57

United States of America
Department of Transportation -- Federal Aviation Administration
Supplemental Type Certificate
IMPORT

Number SR02253NY

This certificate issued to Aero Design Ltd.
2013-39th Avenue NE
Calgary, Alberta, T2E 6R7
Canada

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part 27 of the Federal Aviation Regulations.

Original Product -- Type Certificate Number: H2SW

Make: Bell Helicopter Textron Canada Limited

Model: 206L, 206L-1, 206L-3, 206L-4, 407

Description of Type Design Change:

The installation of Cargo Basket, External Attachment Provisions, Auxiliary Step and Quick Release Step for:

I. Bell 407 Only

1. **407 Configuration A-External Attachment Provisions Only:** Installation of External Attachment Provisions to be done in accordance with Aero Design Ltd. Document Control List, DCL 700, Revision 1 dated September 28, 2007, or later Transport Canada approved revision.

(Description of Type Design Change continued on page 2 of 4)

Limitations and Conditions:

I. Bell 407 Only

1. **407 Configuration A-External Attachment Provisions Only:**

- a. Operation must be in accordance with Aero Design Ltd. Flight Manual Supplement, FMS 700.91, Revision 0 dated May 4, 2006, Transport Canada approved June 9, 2006, or later Transport Canada approved revision.
- b. Instructions for Continued Airworthiness described in Aero Design Ltd. Instructions for Continued Airworthiness ICA 700.90, Revision 0 dated May 3, 2006, Transport Canada accepted June 9, 2006, or later Transport Canada accepted revisions are required for this installation.
- c. External Attachment Provisions installed in accordance with DCL700 may remain installed if the basket installation is removed.

(Limitations and Conditions continued on page 3 of 4)

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: August 9, 2004

Date reissued:

Date of issuance: April 19, 2006

Date amended: April 1, 2011



By direction of the Administrator

[Signature]
(Signature)

Anthony Socias
Manager
New York Aircraft Certification Office

(Title)

Description of Type Design Change (Continued):

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

INSTRUCTIONS: The transfer endorsement below may be used to notify the appropriate FAA Regional Office of the transfer of the Supplemental Type Certificate.

The FAA will reissue the certificate in the name of the transferee and forward it to him.

TRANSFER ENDORSEMENT

Transfer the ownership of Supplemental Type Certificate Number _____

to *(Name of transferee)* _____

(Address of transferee) _____
(Number and street)

(City, State, and ZIP code)

from *(Name of grantor)* *(Print or type)*: _____

(Address of grantor): _____
(Number & street)

(City, State, and ZIP code)

Extent of Authority (if licensing agreement): _____

Date of Transfer: _____

Signature of grantor *(In ink)*: _____

United States of America
Department of Transportation -- Federal Aviation Administration

Supplemental Type Certificate

(Continuation Sheet)

Number SR02253NY

Date of Amendment: April 1, 2011

- I. Bell 407 Only (Continued)
 2. **407 Configuration B-External Cargo Basket Installation (Low Mounted Fixed):** Installation of Configuration A, External Attachment Provisions is a prerequisite for Configuration B, External Cargo Basket Installation. Installation of External Cargo Basket is to be completed in accordance with Transport Canada approved, Aero Design Ltd. Document Control List DCL 606, Revision 3, dated September 28, 2007, or later Transport Canada approved revision. High skid gear is required for the basket installation. Placard is required on the basket lid.
 3. **407 Configuration C-External Cargo Basket Installation (High Mounted Fixed):** Installation of Configuration A, External Attachment Provisions is a prerequisite for installation of Configuration C, External Cargo Basket Installation. Installation of the External Cargo Basket is to be completed in accordance with Transport Canada approved, AERO Design Ltd., Document Control List DCL 606-1, Revision 1, dated December 13, 2006, or later Transport Canada approved revision. Approved emergency exit "push out" windows or an approved sliding door are required on the side of the helicopter that the basket is installed on if passengers are to be carried. Placard required on the basket lid.
 4. **407 Configuration D-External Cargo Basket Installation (Low Mounted Quick Release):** Installation of Configuration A, External Attachment Provisions is a prerequisite for Configuration D, External Cargo Basket Installation. Installation of External Cargo Basket is to be completed in accordance with Transport Canada approved, Aero Design Ltd. Document Control List DCL 701, Revision 3, dated December 2, 2008, or later Transport Canada approved revision. High skid gear is required for the basket installation. Placard is required on the basket lid.
 5. **407 Configuration E-External Cargo Basket Installation (High Mounted Quick Release):** Installation of Configuration A, External Attachment Provisions is a prerequisite for installation of Configuration E, External Cargo Basket Installation. Installation of the External Cargo Basket is to be completed in accordance with Transport Canada approved, AERO Design Ltd., Document Control List DCL 766-1, Revision 1, dated September 23, 2008, or later Transport Canada approved revision. Approved emergency exit "push out" windows or an approved sliding door are required on the side of the helicopter that the basket is installed on if passengers are to be carried. Placard required on the basket lid.
- II. Bell 206L, L-1, L-3, L-4 Only
 1. **206L Series Configuration A-External Attachment Provisions Only:** Installation of External Attachment Provisions to be done in accordance with Transport Canada approved, Aero Design Ltd. Document Control List, DCL 493, Revision 6 dated May 10, 2006, or later Transport Canada approved revision.
 2. **206L Series Configuration B-External Cargo Basket Installation (Low Mounted Fixed):** Installation of Configuration A, External Attachment Provisions is a prerequisite for installation of Configuration B, External Cargo Basket installation. Installation of the cargo basket is to be completed in accordance with Transport Canada approved, AERO Design Ltd., Document Control List DCL 492, Revision 6, dated September 28, 2007, or later Transport Canada approved revision. High skid gear is required for the basket installation. Placard is required on the basket lid.
 3. **206L Series Configuration C-External Cargo Basket Installation (Low Mounted Quick Release):** Installation of Configuration A, External Attachment Provisions is a prerequisite for installation of Configuration C, External Cargo Basket installation. Installation of the cargo basket is to be completed in accordance with Transport Canada approved, AERO Design Ltd., Document Control List DCL 702, Revision 2, dated December 2, 2008, or later Transport Canada approved revision. High skid gear is required for the basket installation. Placard is required on the basket lid.
 4. **206L Series Configuration D-External Cargo Basket Installation (High Mounted Quick Release):** Installation of Configuration A, External Attachment Provisions is a prerequisite for installation of Configuration D, External Cargo Basket Installation. Installation of the External Cargo Basket is to be completed in accordance with Transport Canada approved, AERO Design Ltd., Document Control List DCL 766-1, Revision 1, dated September 23, 2008, or later Transport Canada approved revision. Approved emergency exit "push out" windows or an approved sliding door are required on the side of the helicopter that the basket is installed on if passengers are to be carried. Placard required on the basket lid.

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

United States of America
Department of Transportation -- Federal Aviation Administration

Supplemental Type Certificate

(Continuation Sheet)

Number SR02253NY

Date of Amendment: April 1, 2011

Description of Type Design Change (Continued):

III. All Models (Bell 206L series and 407)

1. **Auxiliary Step Installation:** Installation of the Auxiliary Step is to be completed in accordance with Transport Canada approved, AERO Design Ltd., Document Control List DCL 623, Revision 3, dated November 17, 2010, or later Transport Canada approved revision.
2. **Cargo Basket Modifications:** Modifications to the cargo basket configurations are eligible in accordance with Transport Canada approved, AERO Design Ltd., Document Control List DCL 704, Revision 6, dated April 29, 2010, or later Transport Canada approved revision. Eligibility limitations are noted on the drawings.
3. **Quick Release Step Installation:** Installation of the Low Mounted Quick Release Basket (407-Configuration D; 206L-Configuration C) is required prior to the installation of the Quick Release Step. Installation of the Quick Release Step is to be completed in accordance with Transport Canada approved, AERO Design Ltd., Document Control List DCL 800-2, Revision 0, dated December 2, 2008, or later Transport Canada approved revision.

Limitations and Conditions (Continued):

I. Bell 407 Only (Continued)

2. **407 Configuration B-External Cargo Basket Installation (Low Mounted Fixed):**
 - a. Operation must be in accordance with Transport Canada approved, Aero Design Ltd. Flight Manual Supplement, FMS 606.01, Revision 2 dated September 28, 2007, or later Transport Canada approved revision.
 - b. Instructions for Continued Airworthiness described in Aero Design Ltd. Instructions for Continued Airworthiness ICA 492.90, Revision 1 dated September 28, 2007, Transport Canada accepted January 30, 2008 or later Transport Canada accepted revisions are required for this installation.
3. **407 Configuration C-External Cargo Basket Installation (High Mounted Fixed):**
 - a. Operation must be in accordance with Transport Canada approved, Aero Design Ltd. Flight Manual Supplement, FMS 606.01, Revision 2 dated September 28, 2007, or later Transport Canada approved revision.
 - b. Aero Design Ltd. Maintenance Instructions MI 606.01, Revision 2 dated July 19, 2004, Transport Canada accepted July 20, 2004 or later Transport Canada accepted revisions are required for this installation.
4. **407 Configuration D-External Cargo Basket Installation (Low Mounted Quick Release):**
 - a. Operation must be in accordance with Aero Design Ltd. Flight Manual Supplement, FMS 701.90, Revision 2 dated July 17, 2008, Transport Canada approved April 7, 2009, or later Transport Canada approved revision.
 - b. Instructions for Continued Airworthiness described in Aero Design Ltd. Instructions for Continued Airworthiness ICA 698.90, Revision 1 dated November 9, 2006, Transport Canada accepted January 30, 2008 or later Transport Canada accepted revisions are required for this installation.
5. **407 Configuration E-External Cargo Basket Installation (High Mounted Quick Release):**
 - a. Operation must be in accordance with Aero Design Ltd. Flight Manual Supplement, FMS 766.91, Revision 0 dated October 30, 2007, Transport Canada approved January 30, 2008, or later Transport Canada approved revision.
 - b. Instructions for Continued Airworthiness described in Aero Design Ltd. Instructions for Continued Airworthiness ICA 766.90, Revision 0 dated September 26, 2007, Transport Canada accepted January 30, 2008 or later Transport Canada accepted revisions are required for this installation.

II. Bell 206L, L-1, L-3, L-4 Only

1. **206L Series Configuration A-External Attachment Provisions Only:**

- a. Operation must be in accordance with Aero Design Ltd. Flight Manual Supplement, FMS 493.01 Revision 0 dated May 19, 2002, Transport Canada approved June 27, 2002 or later Transport Canada approved revision.
- b. Instructions for Continued Airworthiness described in AERO Design Ltd. Instructions for Continued Airworthiness ICA 493.90, Revision 0 dated May 4, 2006, Transport Canada accepted June 9, 2006 or later Transport Canada accepted revisions are required for this installation.
- c. External Attachment Provisions installed in accordance with DCL 493 may remain installed if the basket installation is removed.

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

United States of America
Department of Transportation -- Federal Aviation Administration

Supplemental Type Certificate

(Continuation Sheet)

Number SR02253NY

Date of Amendment: April 1, 2011

Limitations and Conditions (Continued):

2. **206L Series Configuration B-External Cargo Basket Installation (Low Mounted Fixed):**

- a. Operation must be in accordance with Transport Canada approved, Aero Design Ltd. Flight Manual Supplement, FMS 492.01 Revision 2 dated September 28, 2007, or later Transport Canada approved revision.
- b. Instructions for Continued Airworthiness described in AERO Design Ltd. Instructions for Continued Airworthiness ICA 492.90, Revision 1 dated September 28, 2007, Transport Canada accepted January 30, 2008 or later Transport Canada accepted revisions are required for this installation.

3. **206L Series Configuration C-External Cargo Basket Installation (Low Mounted Quick Release):**

- a. Operation must be in accordance with Aero Design Ltd. Flight Manual Supplement, FMS 702.90 Revision 2 dated July 17, 2008, Transport Canada approved April 7, 2009 or later Transport Canada approved revision.
- b. Instructions for Continued Airworthiness described in AERO Design Ltd. Instructions for Continued Airworthiness ICA 698.90, Revision 1 dated November 9, 2006, Transport Canada accepted January 30, 2008 or later Transport Canada accepted revisions are required for this installation.

4. **206L Series Configuration D-External Cargo Basket Installation (High Mounted Quick Release):**

- a. Operation must be in accordance with Aero Design Ltd. Flight Manual Supplement, FMS 766.92 Revision 0 dated October 30, 2007, Transport Canada approved January 30, 2008 or later Transport Canada approved revision.
- b. Instructions for Continued Airworthiness described in AERO Design Ltd. Instructions for Continued Airworthiness ICA 766.90, Revision 0 dated September 26, 2007, Transport Canada accepted January 30, 2008 or later Transport Canada accepted revisions are required for this installation.

III. All Models (Bell 206L series and 407)

1. **Auxiliary Step Installation:**

- a. The auxiliary step is optional and is not required with installations listed above.
- b. Auxiliary Step installed in accordance with DCL 623 may remain installed if the basket installation is removed.
- c. Instructions for Continued Airworthiness described in AERO Design Ltd. Instructions for Continued Airworthiness ICA 623.91, Revision 0 dated May 5, 2010, Transport Canada accepted November 17, 2010 or later Transport Canada accepted revisions are required for this installation.

2. **Cargo Basket Modifications:** Eligibility limitations are noted on the drawings contained in AERO Design Ltd., Document Control List DCL 704, Revision 6, dated April 29, 2010, or later Transport Canada approved revision.

3. **Quick Release Step Installation:**

- a. The Quick Release Step is optional and is not required with the Quick Release Cargo Basket Installation.
- b. The Quick Release Step may be stowed in the inboard position on the mounting provisions when the Quick Release Cargo Basket is installed.
- c. Instructions for Continued Airworthiness described in AERO Design Ltd. Instructions for Continued Airworthiness ICA 800.90, Revision 2 dated December 2, 2008, Transport Canada accepted April 7, 2009 or later Transport Canada accepted revisions are required for this installation.

IV. The Installer must determine whether this design change is compatible with previously approved modifications.

V. If the holder agrees to permit another person to use the certificate to alter a product, the holder must give the other person written evidence of that permission.

-----END-----

United States of America
Department of Transportation -- Federal Aviation Administration

Supplemental Type Certificate

IMPORT

Number SR02253NY

This certificate issued to Aero Design Ltd.
2013-39 Avenue, N.E.
Calgary, Alberta
Canada T2E 6R7

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part 27 of the Federal Aviation Regulations.

*Original Product - - Type Certificate Number : **

*Make : **

*Model : **

*See attached FAA Approved Model List (AML) No. SR02253NY for the list of approved aircraft models and applicable airworthiness regulations.

Description of Type Design Change:

Installation of Cargo Basket/External Attachment Provisions/Optional Step

Limitations and Conditions:

1. Bell 407 only:

407 Configuration A – External Attachment Provisions Only:

Installation of the External Attachment Provisions is to be completed in accordance with Transport Canada approved, AERO Design Ltd., Document Control List DCL 606, Rev 1, dated 20 July 2004, or later Transport Canada approved revision, or Document Control List DCL 606-1, Revision 0, dated 1 February 2005, or later Transport Canada approved revision (depending on which basket configuration is installed).

(See continuation Sheets 2 and 3)

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application : August 9, 2004

Date reissued :

Date of issuance : April 19, 2006

Date amended :



By direction of the Administrator

Anthony Socias
(Signature)

Anthony Socias
Manager
New York Aircraft Certification Office

(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

INSTRUCTIONS: The transfer endorsement below may be used to notify the appropriate FAA Regional Office of the transfer of the Supplemental Type Certificate.

The FAA will reissue the certificate in the name of the transferee and forward it to him.

TRANSFER ENDORSEMENT

Transfer the ownership of Supplemental Type Certificate Number _____

to *(Name of transferee)* _____

(Address of transferee) _____
(Number and street)

(City, State, and ZIP code)

from *(Name of grantor)**(Print or type)*: _____

(Address of grantor): _____
(Number & street)

(City, State, and ZIP code)

Extent of Authority (if licensing agreement): _____

Date of Transfer: _____

Signature of grantor *(In ink)*: _____

United States of America
Department of Transportation -- Federal Aviation Administration
Supplemental Type Certificate
(Continuation Sheet)

Number SR02253NY

Date of Issuance: April 19, 2006

Limitations and Conditions (Continued):

AERO Design Ltd., Maintenance Instructions MI606.01, Revision 2, dated 19 July 2004 or later Transport Canada accepted revisions are required with this installation.

External Attachment Provisions may remain installed if the basket installation is removed.

Basis of Certification remains as defined in the applicable Type Certificate Data Sheets.

407 Configuration B – External Cargo Basket Low Mounted

Installation of Configuration A, External Attachment Provisions is a prerequisite for installation of Configuration B, External Cargo Basket Installation. Installation of the External Cargo Basket is to be completed in accordance with Transport Canada approved, AERO Design Ltd., Document Control List DCL606, Revision 1, dated 20 July 2004, or later Transport Canada approved revision. High skid gear is required for the basket installation. Placard is required on the basket lid.

Transport Canada approved, AERO Design Ltd., Flight Manual Supplement FMS 606.01, Revision 1, dated 1 February 2005, or later Transport Canada approved revision, is required with this installation.

AERO Design Ltd. Maintenance Instructions MI 606.01, Revision 2, dated 19 July 2004, or later Transport Canada accepted revision, is required with this installation.

Basis of Certification remains as defined in the applicable Type Certificate Data Sheets.

407 Configuration C – External Cargo Basket Installation High Mounted

Installation of Configuration A, External Attachment Provisions is a prerequisite for installation of Configuration C, External Cargo Basket Installation. Installation of the External Cargo Basket is to be completed in accordance with Transport Canada approved, AERO Design Ltd., Document Control List DCL606-1, Revision 0, dated 1 February 2005, or later Transport Canada approved revision. Approved emergency exit "push out" windows or an approved sliding door are required on the side of the helicopter that the basket is installed on if passengers are to be carried. Placard required on the basket lid.

Transport Canada approved AERO Design Ltd., Flight Manual Supplement FMS 606.01 Revision 1 dated 01 February 2005, or later Transport Canada approved revision, is required with this installation.

AERO Design Ltd., Maintenance Instructions MI606.01 Revision 2, dated 19 July 2004, or later Transport Canada accepted revisions are required with this installation.

Basis of Certification remains as defined in the applicable Type Certificate Data Sheets.

2. Bell 206L, L-1, L-3, L-4 only:

206L Series Configuration A – External Attachment Provisions Only:

Installation of the External Attachment Provisions is to be completed in accordance with Transport Canada approved, AERO Design Ltd., Document Control List DCL 493, Rev. 5, dated 20 July 2004, or later Transport Canada approved revision.

Transport Canada approved AERO Design Ltd. Flight Manual Supplement FMS 493.01, Revision 0, dated 19 May 2002, or later Transport Canada approved revision, is required with this installation.

(See Continuation Sheet 3 of 3)

United States of America
Department of Transportation -- Federal Aviation Administration
Supplemental Type Certificate
(Continuation Sheet)

Number SR02253NY

Date of Issuance: April 19, 2006

Limitations and Conditions (Continued):

AERO Design Ltd. Maintenance Instructions MI 493.01, Revision 2, dated 19 July 2004, or later Transport Canada accepted revision, is required with this installation.

External Attachment Provisions may remain installed if the basket installation is removed.

Basis of Certification is as defined in the Type Certificate Data Sheets for the Bell 407.

206L Series Configuration B – External Cargo Basket Low Mounted:

Installation of Configuration A, External Attachment Provisions is a prerequisite for installation of Configuration B, External Cargo Basket installation. Installation of the cargo basket is to be completed in accordance with Transport Canada approved, AERO Design Ltd., Document Control List DCL492, Revision 4, dated 20 July 2004, or later Transport Canada approved revision. High skid gear is required for the basket installation. Placard is required on the basket lid.

Transport Canada approved AERO Design Ltd., Flight Manual Supplement FMS 492.01, Revision 1, dated 25 June 2002, or later Transport Canada approved revision, is required with this installation.

AERO Design Ltd. Maintenance Instructions MI 492.01, Revision 3, dated 19 July 2004, or later Transport Canada accepted revision, is required with this installation.

Basis of Certification is as defined in the Type Certificate Data Sheets for the Bell 407.

3. All Models (Bell 206L series and 407)

Auxiliary Step Installation:

Installation of the Auxiliary Step is to be completed in accordance with Transport Canada approved, AERO Design Ltd., Document Control List DCL623, Revision 0, dated 13 Jan 2005, or later Transport Canada approved revision.

The auxiliary step is optional.

Auxiliary Step installed in accordance with DCL623 may remain installed if the basket installation is removed.

Basis of Certification is as defined in the Type Certificate Data Sheets for the Bell 407 (Bell 407 cert basis used for 206L series).

4. Compatibility of this design change with previously approved modifications must be determined by the installer.

5. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

.... END....

FAA APPROVED MODEL LIST (AML) NO. **SR02253NY**

INSTALLATION OF CARGO BASKET/EXTERNAL ATTACHMENT PROVISIONS/OPTIONAL STEP

Issue Date: April 19, 2006

MAKE	MODEL	CERTIFICATION BASIS			REQUIRED DOCUMENTATION		AML AMENDMENT DATE
		PART	REGULATION	TCDS	MAINTENANCE MANUAL SUPPLEMENT	FLIGHT MANUAL SUPPLEMENT	
Bell	206L, 206L-1, 206L-3, 206L-4	FAR 27	Federal Aviation	H2SW	For Configuration A: Aero Design Ltd. Maintenance Instructions MI 493.01, Revision 2, dated 19 July 2004 or later Transport Canada accepted revisions. For Config B: Aero Design Ltd. Maintenance Instructions MI 492.01, Revision 3, dated 19 July 2004 or later Transport Canada accepted revisions.	For Configuration A: Transport Canada Approved AERO Design Ltd. Flight Manual Supplement FMS 493.01 Revision 0 dated 19 May 2002 or later Transport Canada approved revisions For Configuration B: Transport Canada Approved AERO Design Ltd. Flight Manual Supplement FMS 492.01 Revision 1 dated 25 June 2002 or later Transport Canada approved revisions	
	407	FAR 27		H2SW	For Configuration A, B and C: Aero Design Ltd. Maintenance Instructions MI 606.01, Revision 2, dated 19 July 2004 or later Transport Canada accepted revisions.	For Configuration B and C: Transport Canada Approved AERO Design Ltd. Flight Manual Supplement FMS 606.01 Revision 1 dated 01 February 2005 or later Transport Canada approved revisions	

FAA Approved:

Anthony Socias
Anthony Socias

Manager, New York Aircraft Certification Office

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

APPENDIX A-3 NORMAL CATEGORY ROTORCRAFT – CAR 527

NAPA PROJ
C-12-0087
Signed by
Jack Staal.
JL

BLOCK 1

Name of the applicant for the design change approval:	Aero Design Ltd.
Description of the design change:	Installation of Quick Release Cargo Baskets on Bell 206L Series
Certification Basis of design change and revision date:	FAR 27, Amendment 27-30
CAR Standard A527.1(c) Program showing how changes to supplemental ICA made by the applicant or by the manufacturers of products and appliances installed in the aeroplane pursuant to the design change will be distributed:	Section 0-3 of Supplemental ICA (ICA 698.90)
CAR Standard 513.05 (1) (g) (iv): Installation Instructions:	Installation Drawing 70101, 70102, 70201, 70202, 94501, 94502, 94601, 94602

BLOCK 2

Note: Enter "N/A" when no supplemental ICA are needed.

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.2 (a) Manual(s) (a) The Instructions for Continued Airworthiness must be in the form of a manual or manuals as appropriate for the quantity of data to be provided.	ICA ref: Bell 206L/407 Maintenance Manuals, BHT-206L-MM/BHT-407-MM	Supplemental ICA ref: Single Manual (ICA698.90)
A527.2 (b) Practical arrangement (b) The format of the manual or manuals must provide for a practical arrangement.	ICA ref: Bell 206L/407 Maintenance Manuals	Supplemental ICA ref: Arranged in ATA format
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (a) Rotorcraft maintenance manual or section		
A527.3 (a) (1) (Introduction) (1) Introduction information that includes an explanation of the rotorcraft's features and data to the extent necessary for maintenance or preventive maintenance.	ICA ref: Bell 206L/407 Maintenance Manual, Chapter 1	Supplemental ICA ref: Section 0-1
A527.3 (a) (2) (Description) (2) A description of the rotorcraft and its systems and installations including its engines, rotors, and appliances.	ICA ref: Bell 206L/407 Maintenance Manual, Chapter 1	Supplemental ICA ref: Section 0-5, 0-6

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (a) (3) Control & Operation (3) Basic control and operation information describing how the rotorcraft components and systems are controlled and how they operate, including any special procedures and limitations that apply.	ICA ref: N/A	Supplemental ICA ref: N/A
A527.3 (a) (4) Servicing (4) Servicing information that covers details regarding servicing points, capacities of tanks, reservoirs, types of fluids to be used, pressures applicable to the various systems, location of access panels for inspection and servicing, locations of lubrication points, lubricants to be used, equipment required for servicing, tow instructions and limitations, mooring, jacking, and levelling information.	ICA ref: Bell 206L/407 Maintenance Manual, Chapter 12	Supplemental ICA ref: N/A
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (b) Maintenance Instructions.		
A527.3 (b) (1) Scheduling 1) Scheduling information for each part of the rotorcraft and its engines, auxiliary power units, rotors, accessories, instruments, and equipment that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerances, and work recommended at these periods. However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. The recommended overhaul periods and necessary cross-references to the Airworthiness Limitations section of the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the rotorcraft.	ICA ref: Bell 206L/407 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (b) (2) Troubleshooting (2) Troubleshooting information describing probable malfunctions, how to recognize those malfunctions, and the remedial action for those malfunctions.	ICA ref: N/A	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (b) (3) Removal/replacement (3) Information describing the order and method of removing and replacing products and parts with any necessary precautions to be taken.	ICA ref: Bell 206L/407 Maintenance Manual, Chapter 25	Supplemental ICA ref: Section 25-1 thru 25-7
A527.3 (b) (4) General (4) Other general procedural instructions including procedures for system testing during ground running, symmetry checks, weighing and determining the center of gravity, lifting and shoring, and storage limitations.	ICA ref: Bell 206L/407 Maintenance Manual, Chapter 7 and 8	Supplemental ICA ref: Section 25-8
A527.3 (c) Access (c) Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	ICA ref: N/A	Supplemental ICA ref: N/A
A527.3 (d) Special inspections (d) Details for the application of special inspection techniques including radiographic and ultrasonic testing where such processes are specified.	ICA ref: Bell 206L/407 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (e) Protective treatment (e) Information needed to apply protective treatments to the structure after inspection.	ICA ref: Bell Standard Practices Manual BHT-ALL-SPM, Chapter 3	Supplemental ICA ref: Section 5-3
A527.3 (f) Fasteners, torque values, etc (f) All data relative to structural fasteners such as identification, discard recommendations, and torque values.	ICA ref: Bell Standard Practices Manual BHT-ALL-SPM, Chapter 2	Supplemental ICA ref: Section 25-9
A527.3 (g) Special tools (g) A list of special tools needed.	ICA ref: N/A	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

BLOCK 3

Note: The statement in block 5 does not constitute an approval of the Airworthiness Limitations Section. Airworthiness Limitations differ from other maintenance tasks, in that they are mandatory, as a direct condition of the approval of the type design. They are therefore referenced directly in the approval document itself. However, they must also be included in the Supplemental Instructions for Continued Airworthiness.

A527.4 AWL - Separate Section 1 The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure approved under 527.571. If the Instructions for Continued Airworthiness consist of multiple documents, the section required by this paragraph must be included in the principal manual. This section must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister."	ICA ref: Bell 206L/407 Maintenance Manual, Chapter 4	Supplemental ICA ref: Chapter 4
---	--	---------------------------------

BLOCK 4 – Applicant Statement of Compliance

The Supplemental ICA referenced above comprises the complete listing of supplemental ICA necessary to show compliance with the regulatory standard that supports this change in type design.

Applicants Signature:  Date: 02 August, 2012

Applicants Name: E. Burgoin, P.Eng. DAR 290M

BLOCK 5 – Minister's Statement of Acceptability

The design change is adequately supported by existing ICA and/or supplemental ICA, as identified above and is acceptable to the Minister.

Reviewer's Name: JACK STAAL Phone # 780-495-5227 Email: jack.staal@tc.gc.ca Mail Routing Symbol: RAED

Signature:  Date: 3 Aug. 2012 NAPA Number 42-0087

Rev 3.



Transport
Canada

Transports
Canada

1100-9700 Jasper Avenue
Edmonton, Alberta T5J 4E6

Your file Votre référence

August 27, 2012

Our file Notre référence
C-12-0087
SH00-48

Aero Design Ltd.
2013 39th Avenue North East
Calgary, Alberta
Canada, T2E 6R7

ATTENTION: EDWARD BURGOIN – DAR 290M

Dear Sirs:

SUBJECT:	Approval of	Installation of Cargo Basket / External Attachment Provisions/Optional Step.
	FAA STC:	SR02253NY
	Aircraft:	Bell 206L, L1, L3, L4, 407
	FAA STC Holder:	Aero Design Ltd.

Enclosed is the original FAA Supplemental Type Certificate SR02253NY and information concerning your responsibility as a holder of a Supplemental Type Certificate issued to a Canadian Applicant.

FAA STC SR02253NY is based on Issue 9 of Canadian STC SH00-48

Yours truly,

J. Staal
Engineering Technologist, Engineering
Civil Aviation
Prairie and Northern Region
Phone: 780-495-5227
Facs: 780-495-7963

Encl.

**NEW ENGLAND REGION
NEW YORK AIRCRAFT CERTIFICATION OFFICE
1600 STEWART AVENUE, SUITE 410
WESTBURY, NEW YORK 11590**

**INFORMATION CONCERNING YOUR RESPONSIBILITY AS HOLDER OF A
SUPPLEMENTAL TYPE CERTIFICATE ISSUED TO A CANADIAN APPLICANT**

This STC is official indications of FAA approval of your installation and may be used to authorize identical installation on other aircraft of the same model, subject to the limitation noted in the STC. It may be transferred, or otherwise made available to another party by means of a licensee arrangement; however, you are requested to advise this office when you transfer or grant licensee rights to the STC in order that we may take the necessary recording or reissuance action.

If you plan to manufacture and sell parts for installation on type certificated aircraft, please review FAR 21.502, which is applicable to parts imported into the U.S.

A copy of the STC and required documents should accompany each kit and installation. Also, your attention is directed to the limitations and conditions specified in the STC.

As recipient of this approval, except as provided in FAR21.3(d), you are required to report any failure, malfunction, or defect in any product or part manufactured by you that you have determined has resulted or could result in any of the occurrences listed in FAR 21.3(c).

The report should be communicated initially by telephone and subsequently in writing to the Manager, New York Aircraft Certification Office, telephone (516) 228-7300, mailing address: 1600 Stewart Avenue, Suite 410, Westbury, New York 11590. This first contact should take place within 24 hours after it has been determined that the failure required to be reported has occurred.

FAA Form 8010-4, Malfunction or Defect Report, or any other appropriate format is acceptable in transmitting the required details.



Raymond Reinhardt
Acting Manager,
New York Aircraft Certification Office

MODIFICATION APPROVAL REQUEST APPLICATION FORM

MOD698, Rev. 1

1. NAME AND ADDRESS OF APPLICANT:		2. IDENTIFICATION OF PRODUCT	
AERO Design Ltd. 2013 - 39th Avenue NE Calgary, Alberta, Canada T2E 6R7		MAKE: Bell Helicopter (Textron)	MODEL: 206L series, 407
ALL CORRESPONDANCE TO: AERO Design Ltd. 2013 - 39th Avenue NE Calgary, Alberta T2E 6R7		SERIAL No.: All eligible	REGISTRATION: All eligible

3. REQUEST FOR:

A. SUPPLEMENTAL TYPE CERTIFICATE (STC)	<input type="checkbox"/>	
B. STC/STA REVISION	<input type="checkbox"/>	STC/STA No.
C. LIMITED SUPPLEMENTAL TYPE CERTIFICATE (LSTC)	<input type="checkbox"/>	
D. LIMITED STC/STA REVISION	<input type="checkbox"/>	LSTC/LSTA No.
E. F.A.A. SUPPLEMENTAL TYPE CERTIFICATE	<input type="checkbox"/>	
F. F.A.A. STC REVISION	<input checked="" type="checkbox"/>	STC No. SR02253NY
G. FAMILIARIZATION OF F.A.A. STC	<input type="checkbox"/>	STC No.
H. REPAIR DESIGN APPROVAL (RDC)	<input type="checkbox"/>	
I. PARTS DESIGN APPROVAL (PDA)	<input type="checkbox"/>	

4. TITLE OF MODIFICATION OR REPAIR:
Quick Release Cargo Basket Installation

5. BRIEF DESCRIPTION OF MODIFICATION OR REPAIR:
This revision adds new cargo basket configurations, and increases capacity of some existing cargo baskets. See SH00-48 for configurations.

6. APPLICABLE TYPE APPROVAL (TA) OR TYPE CERTIFICATE (TC) DOCUMENTS:

A. TA NO. <u>H-92</u>	B. TC No. <u>H2SW</u>	C. OTHER _____
-----------------------	-----------------------	----------------


7. PROPOSED BASIS OF APPROVAL:

A. SAME AS TA <input checked="" type="checkbox"/>	B. SAME AS TC <input type="checkbox"/>	C. OTHER <input type="checkbox"/> (Please specify) _____
---	--	--


8. DOCUMENTATION CHECKLIST	REQUIRED		FOR DOT USE ONLY		
	YES	NO	RECEIVED		
			YES	NO	DATE
COMPLIANCE PROGRAM	X				
MASTER DRAWING LIST	X				
FLIGHT MANUAL SUPPLEMENT	X				
MAINTENANCE MANUAL SUPPLEMENT		X			
INSTRUCTIONS FOR CONTINUING AIRWORTHINESS	X				
ENGINEERING REPORTS	X				
DESIGN DRAWINGS		X			
MANUFACTURE DRAWINGS & INSTALLATION INSTRUCTIONS	X				
ELECTRICAL LOAD ANALYSIS		X			
DRAFT STC, LSTC OR RDA		X			
WEIGHT AND MOMENT CHANGE	X				
FLIGHT TEST DATA	X				
OTHER (Specify)		X			

9. APPLICANT'S REMARKS:
STC based on Transport Canada STC # SH00-48 issue 9

10. In addition to the payment of Aircraft Certification approval fees as prescribed in Canadian Aviation Regulations (CAR) Section 104, I agree to reimburse Transport Canada incremental expenses as in Aviation Regulation Directive No. 3, or equivalent, as applicable. For further details governing cost recovery, refer to AMA 513/4.

AERO Design Ltd.		FOR	
PER: 	E. BURGGIN	Consultant	25 January, 2012
SIGNATURE OF APPLICANTS		TITLE	DATE

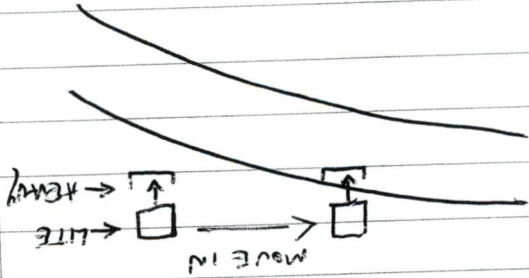
11.

	9 Feb 2012
SIGNATURE OF REGIONAL ENGINEER	DATE

DISTANCE TO FUSAGE
IS EVEN GREATER
NO PROBLEM THERE

PHOTOS
DSC-0051 THRU 57

THE TUBE OVER THE
SLOPED SECTION WOULD
TOUCH THE X-TUBE
@ 7-8" or so
BUT THIS IS ALSO
VULNERABLE TO WEIGHT
eg:



I TOOK THESE NOTES AFTER PHOTOGRAPHING
THE L.R-HELICOPTERS FLIGHT TEST (206L)
17 NOVEMBER 2011. SOME PHOTOS WERE TAKEN
TO ILLUSTRATE THESE OBSERVATIONS
— 57

LONG
BASKET ON 206L

MOVED IN CLOSER

① PILOT DOOR WOULD
HIT STRUT/LITTLE LEVER
AND LID EDGE ALL
AT ABOUT 5" INBOARD

② ARCH OVER HT GEAR

X-TUBE AND SLOPED MESH
ANGLE IN MESH AS
IT IS NOW WOULD TOUCH
@ 4-5" INBOARD

2 BEAMS

$$R_B (AFT) = 2348 \text{ LB (UP)}$$

$$R_B (FWD) = \frac{(1906)(53.25)}{26} = 1933 \text{ LB (UP)}$$

$$DRG = 423 \text{ LB} \div 2 \text{ BEAMS} = 212 \text{ LB}$$

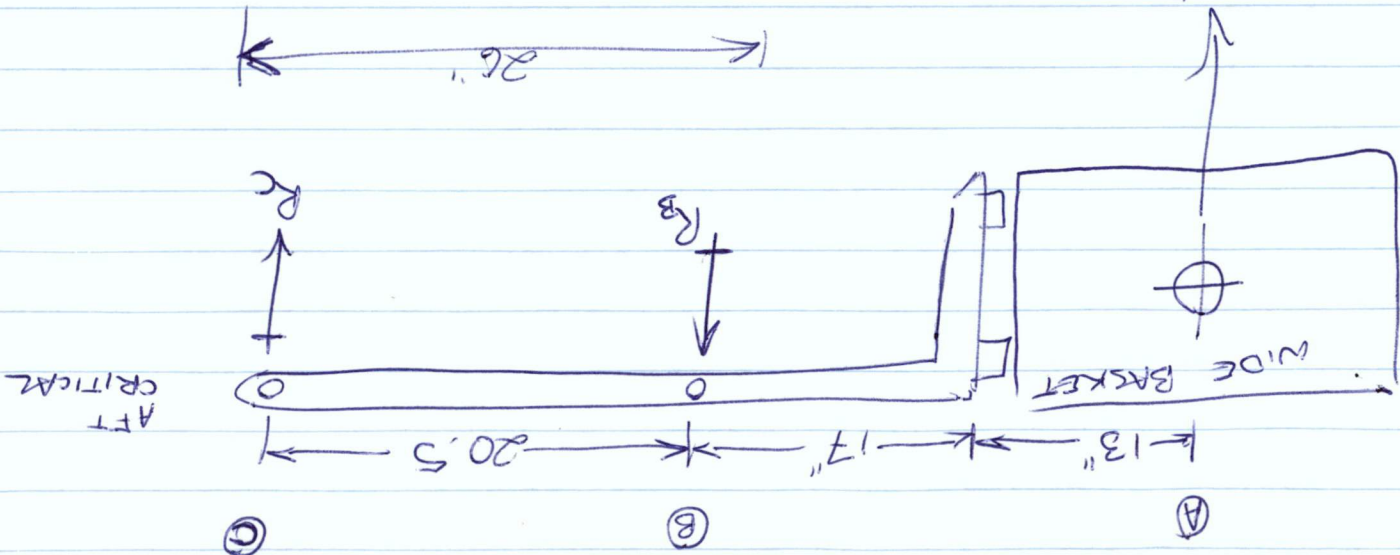
$$R_B (AFT) = \frac{(212)(50.5)}{20.5} = 522 \text{ LB}$$

$$0 = M_c = R_B (20.5) - (1906 \text{ LB})(50.5 \text{ in})$$

$$R_B = 4695 \text{ LB}$$

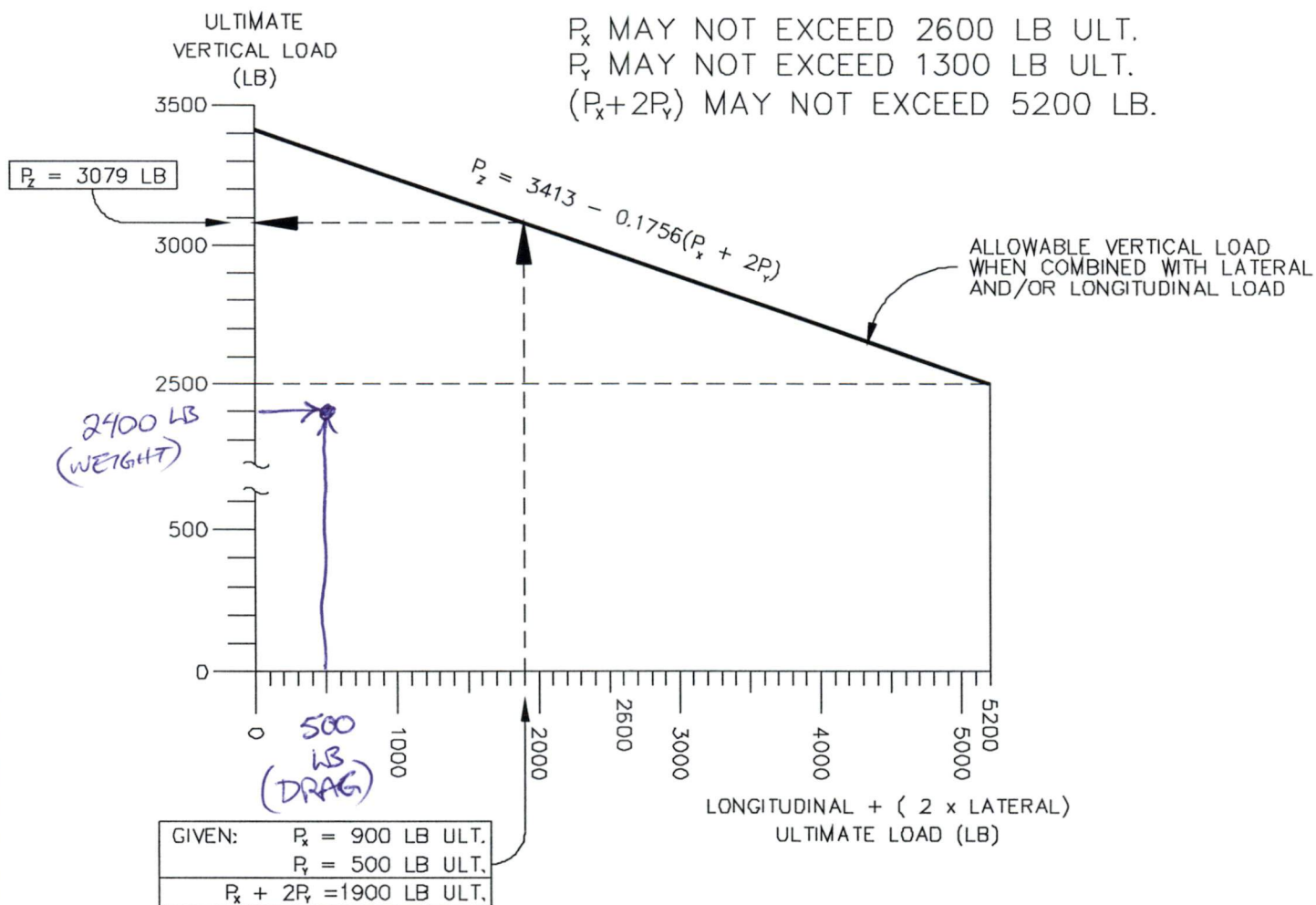
$$1906 \text{ LB} \times 5.25 \text{ WT. MM}$$

300 LB
+ 63 (LONG)



DESIGN ALLOWABLE ULTIMATE VERTICAL LOAD WHEN COMBINED WITH LONGITUDINAL AND LATERAL LOADS

EXAMPLE: IF A GIVEN INSTALLATION APPLIES 900 LB OF DRAG ULTIMATE LOAD, AND 500 POUNDS OF SIDE ULTIMATE LOAD, THEN UP TO 3079 POUNDS OF VERTICAL ULTIMATE LOAD IS PERMITTED.

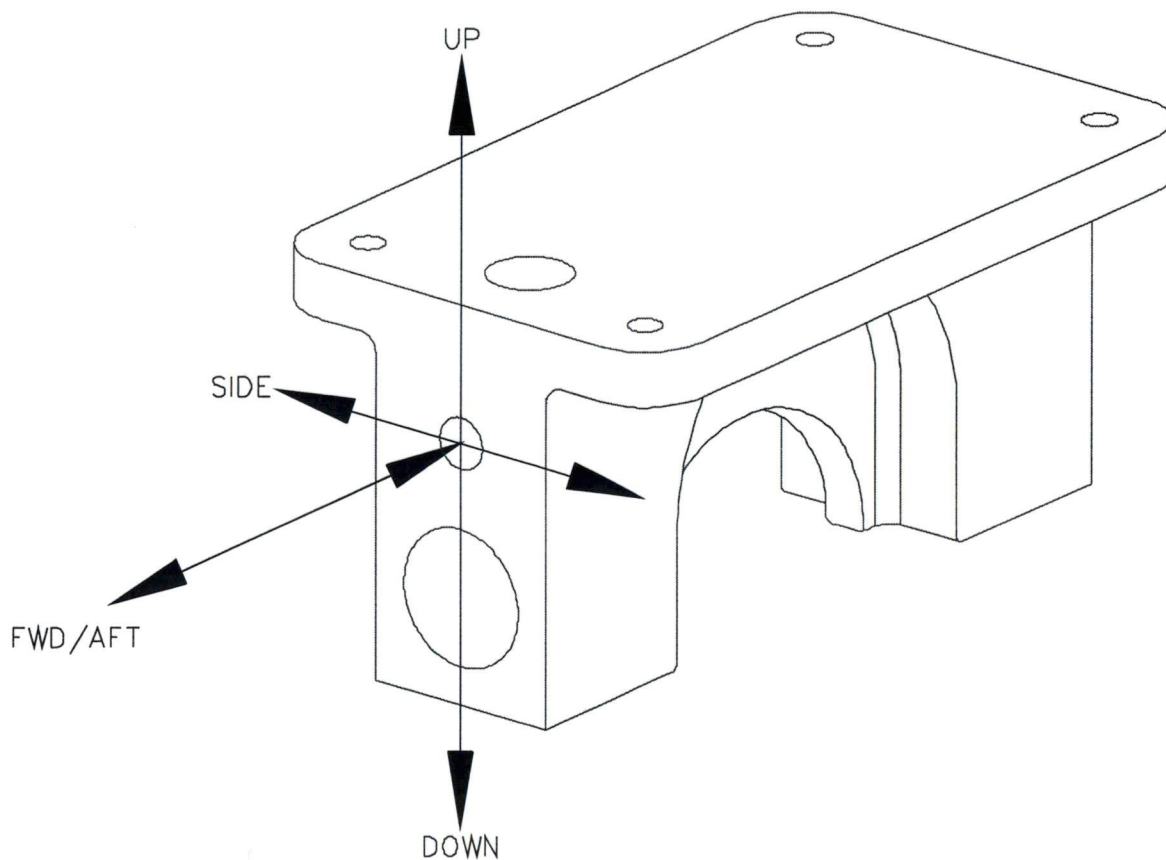


DESIGN ALLOWABLE LOADS EXTERNAL ATTACHMENT PROVISIONS

THE FOLLOWING CONDITIONS
MUST BE MET TO ACHIEVE
THE LOADS SHOWN HERE:

- AN6 BOLT INSTALLED
- FULL THREAD ENGAGEMENT
- AN6 BOLT TORQUED TO
90 TO 110 INCH-POUNDS
- AN4 BOLTS TORQUED TO
70 TO 90 INCH-POUNDS

DIRECTION	LIMIT (POUNDS)	ULTIMATE (POUNDS)
UP/DOWN	1978	3413
FWD/AFT	1507	2600
SIDE	754	1300



NOTICE

THIS DRAWING CONTAINS INFORMATION AND DATA WHICH IS PROPRIETARY TO AERO DESIGN LTD. THIS DRAWING, OR ANY PORTION THEREOF, MAY NOT BE REPRODUCED, COPIED, OR DUPLICATED IN ANY MANNER, NOR USED FOR MANUFACTURING WITHOUT THE WRITTEN CONSENT OF AERO DESIGN LTD. BY ACCEPTING THIS DRAWING FOR REFERENCE, THE RECIPIENT AGREES TO HOLD AERO DESIGN LTD. HARMLESS FROM THE USE, OR MISUSE, OF THIS DRAWING OR THE INFORMATION CONTAINED THEREON.

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	ORIGINAL ISSUE		

NOTES

- ENGRAVE 0.007 DEEP AS FOLLOWS:
 "QUICK RELEASE BASKET" - 0.125 HIGH
 "BELL 206L SERIES & 407" - 0.080 HIGH
 "S/N 94601-XX" - 0.080 HIGH
 "MAXIMUM PERMISSIBLE LOAD" - 0.125 HIGH
 "300 LBS. TOTAL" - 0.200 HIGH
 "AERO DESIGN LTD." - 0.125 HIGH
 "CALGARY, ALBERTA, CANADA" - 0.080 HIGH
 "403-250-8027" - 0.080 HIGH

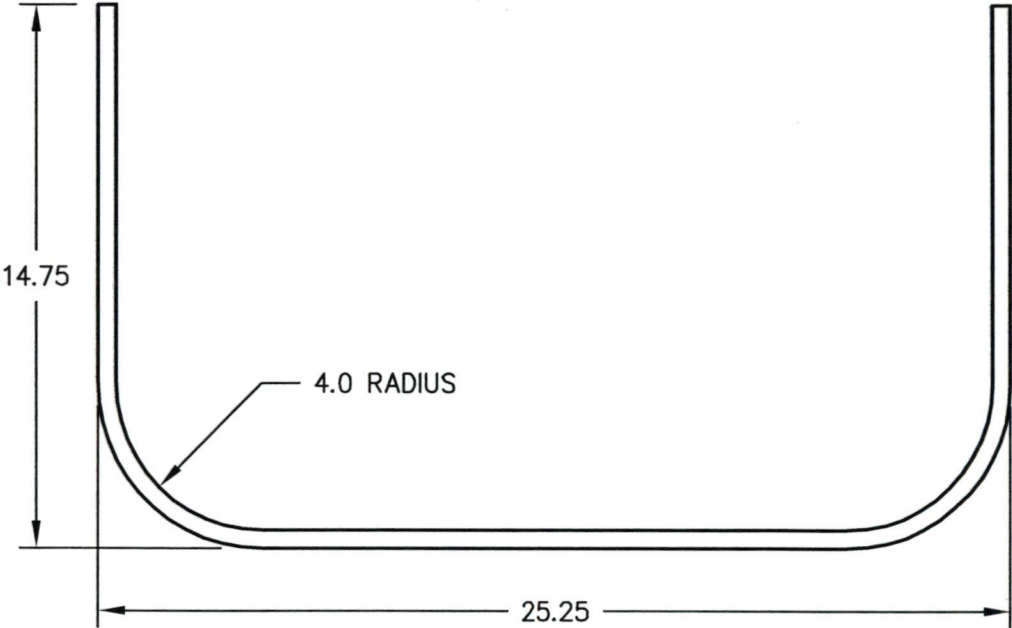
DRILL #30 (0.129)
4 PLACES



01 PLACARD

1	94627-01	01	PLACARD	6061-T6 ALUMINUM	QQ-A-250/11	0.050 SHEET
01	PART NO.	ITEM	DESCRIPTION	MATERIAL	MATERIAL SPEC	STOCK SIZE
QTY	LIST OF MATERIALS					
			APPROVALS	DATE	AERO DESIGN LTD. CONSULTING ENGINEERS, TRANSPORT CANADA APPROVALS, DAR 290M 2013 - 39TH AVENUE N.E., CALGARY, ALBERTA, CANADA, T2E 6R7 tel: (403) 250-8027 fax: (403) 250-8333 aerodesign@telusplanet.net	
			DRAWN: JEFF CLARKE	16 SEPT 2011		
			CHECKED: E. BURGOIN			
			UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON: DECIMALS ANGLES X.XXX ±0.010 ±1/2° X.XX ±0.03 X.X ±0.1		BELL 206L SERIES, 407 QUICK RELEASE CARGO BASKET PLACARD	
			SCALE 1 : 1	DWG. SIZE	DWG. NO.	REV.
			SHEET 1 OF 1	A1	94627	0

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0			



01 HOOP


- NOTES:
1. REMOVE ALL BURRS AND SHARP EDGES.
 2. DRILL 3/32" VENT HOLE IN BOTTOM OF HOOPS FOR VENTING WELD GASES.

94620-01		01	END HOOP	4130 STEEL COND. N		MIL-T-6736		1/2 x 0.035 SQR. TUBE			
01	PART NO.		ITEM	DESCRIPTION		MATERIAL		MATERIAL SPEC		STOCK SIZE	
QTY		LIST OF MATERIALS									
THIS DRAWING CONTAINS INFORMATION AND DATA WHICH IS PROPRIETARY TO AERO DESIGN LTD. THIS DRAWING, OR ANY PORTION THEREOF, MAY NOT BE REPRODUCED, COPIED, OR DUPLICATED IN ANY MANNER, NOR USED FOR MANUFACTURING WITHOUT THE WRITTEN CONSENT OF AERO DESIGN LTD. BY ACCEPTING THIS DRAWING FOR REFERENCE, THE RECIPIENT AGREES TO HOLD AERO DESIGN LTD. HARMLESS FROM THE USE, OR MISUSE, OF THIS DRAWING OR THE INFORMATION CONTAINED THEREON.		APPROVALS		DATE		<div><div>AERO DESIGN LTD.</div><div>CONSULTING ENGINEERS, TRANSPORT CANADA APPROVALS, DAR 290M 2013 - 39TH AVENUE N.E., CALGARY, ALBERTA, CANADA, T2E 6R7 tel: (403) 250-8027 fax: (403) 250-8333 www.aerodesign.ca</div></div>					
		DRAWN: JEFF CLARKE		13 SEPT 2011							
		CHECKED: E. BURGOIN				<div><div>BELL 206L SERIES, 407 QUICK RELEASE CARGO BASKET HOOP</div></div>					
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON:									
		DECIMALS		ANGLES							
X.XXX ±0.010		±1/2°		SCALE 1 : 5		DWG. SIZE		DWG. NO.		REV.	
X.XX ±0.03				SHEET 1 OF 1		LGL		94620		0	
X.X ±0.1											



**MINISTERIAL DELEGATE STATEMENT OF COMPLIANCE
WITH THE CERTIFICATION BASIS**

**DÉLÉGUÉ MINISTÉRIEL CONSTAT DE CONFORMITÉ
AVEC LA BASE DE CERTIFICATION**

1. Reference No. / N° de référence NAPA File C-11-0786 Aero Design Project 946		2. Applicant Name / Nom de demandeur Aero Design Ltd.	
Part 1: Identification of Aeronautical Product Partie 1 : Identification des produits aéronautiques			
3. Applicable Design Approval Document No. / N° du document d'approbation de la conception applicable H-92			
4. Model No. / N° de modèle 206L, 206L-1, 206L-3, 206L-4, 407		5. Make / Marque Bell Helicopter Textron Canada Ltd.	
6. Type (aircraft, engine, propeller, appliance, part) / Type (aéronef, moteur hélice, appareillage, pièce) Helicopter			
Part 2: Substantiating Reports and Data Partie 2 : Rapports et des données pertinentes			
7. Number / Numéro DCL946-1 Revision 0		8. Title / Titre Document Control List, and all documents referenced therein.	
DCL946-2, Revision 0		Document Control List, and all documents referenced therein.	
DCL946-10, Revision 0		Document Control List, and all documents referenced therein.	
9. Purpose of Finding of Compliance / But de la constat de conformité <input type="checkbox"/> New approval: <input type="checkbox"/> Supplemental Type Certificate <input type="checkbox"/> Supplemental Type Certificate-Limited <input type="checkbox"/> Repair Design Certificate <input type="checkbox"/> Other: Revision is to add new, larger configuration of basket.) <input checked="" type="checkbox"/> Revise existing approval # SH00-48 Yes The revised data requires the revision of the approval document. Yes The revised data is within the scope of the accepted Certification Plan.			
10. Applicable Elements of Certification Basis / Éléments applicables de la base de certification <input checked="" type="checkbox"/> Certification Plan: CP945, Rev. 0 <input type="checkbox"/> Letter of exention of delegation, dated:			
Part 3: Ministerial Delegate Finding of Compliance with the Certification Basis Partie 3 : Délégué ministériel constat de conformité avec la base de certification			
Under the authority vested in me by the Minister under subsection 4.3(1) of the <i>Aeronautics Act</i> , I hereby find that the type design of the aeronautical product is in compliance with the certification basis as demonstrated by the applicant's substantiating reports and data to the best of my knowledge.		En vertu des pouvoirs qui m'ont été conférés par le ministre conformément au paragraphe 4.3(1) de la <i>Loi sur l'Aéronautique</i> , j'estime que, à ma connaissance, la définition de type du produit aéronautique est conforme à sa base de certification tel qu'il a été démontré par les rapports et les données pertinentes fournis par le demandeur.	
11. Signature of Delegate(s) Signature des délégués	12. Name / Nom	13. Delegate No. / N° de délégué	14. Date (yyyy-mm-dd) Date (aaaa-mm-jj)
	E. Burgoin, Aero Design Ltd.	DAR 290M	2011-11-22

Transport
CanadaTransports
Canada
**MINISTERIAL DELEGATE STATEMENT OF COMPLIANCE
WITH THE CERTIFICATION BASIS**
**DÉLÉGUÉ MINISTÉRIEL CONSTAT DE CONFORMITÉ
AVEC LA BASE DE CERTIFICATION**

Block 7 (continued from sheet 1)

Document Number	Revision	Title	Comment
DCL946-1	0	Document Control List – Bell 407 Installation	
94601	0	Quick Release Cargo Basket Installation	
70102	0	Quick Release Mounting Provisions Installation	
SI698.91	0	Service Instructions – Sliding Door Modification	
DCL946-2	0	Document Control List – Bell 206L Installation	
94602	0	Quick Release Cargo Basket Installation	
70202	0	Quick Release Mounting Provisions Installation	
DCL946-10	0	Document Control List – Cargo Basket Fabrication	
94610	0	Cargo Basket Assembly	
94611	0	Basket Body Assembly	
94612	0	Basket Lid Assembly	
94620	0	Basket Components - Hoop	
94521	0	Basket Components - Brace	
94627	0	Basket Components - Placard	
94520	0	Basket Components - Hoop	
94521	0	Basket Components - Forward Hoop	
94522	0	Basket Components - Aft Hoop	
69823	1	Basket Components - Lugs	
49215	0	Basket Components - Spacer	
49216	0	Basket Components - Spacer	
84255	1	Handle Assembly	
84261	1	Handle Bar Assembly	
84262	1	Handle Bracket Assembly	
84265	1	Handle Lever	
84267	0	Handle Bracket	
84272	1	Bushing	
36273	1	Lid Bracket	
36274	2	Bushing	
36275	3	Bushing	
36277	0	Handle Bar	
36278	1	Spring	
36280	2	Brace	
ER946.01	0	Engineering Report	
FTP945.03	1	Flight Test Plan and Report	
ER842.01	0	Engineering Report	

DCL698-2	4	Document Control List – Beams Fabrication
69830	3	Forward Beam Fabrication
69831	3	Aft Beam Fabrication
ER698.02	0	Engineering Report
TP698.03	0	Test Report
ER698.04	0	Engineering Report
ER698.06	0	Engineering Report

Documents listed below this line (if any) cannot be approved by the delegate:

FMS701.90	3	Flight Manual Supplement (Bell 407)
FMS702.90	3	Flight Manual Supplement (Bell 206L Series)
ICA698.90	2	Instructions for Continued Airworthiness

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
INSTALLATION DOCUMENTS		
94601	Quick Release Cargo Basket Installation	0 ✓
70102	Quick Release Mounting Provisions Installation	0 ✓
FMS701.90	Flight Manual Supplement	3 ✓
ICA698.90	Instructions for Continued Airworthiness	2 ✓
SI698.91	Service Instructions – Sliding Door Modification	0 ✓
FABRICATION DOCUMENTS		
DCL946-10	Document Control List for Cargo Basket Assembly	0 ✓
DCL698-2	Document Control List for Beams	4 ✓
APPROVAL:	ORIGINAL DATE: 27 October 2011	AERO DESIGN LTD. 2013 – 39 th Ave NE, Calgary, Alberta, T2E 6R7 Ph. (403) 250-8027 Fax. (403) 250-8333 www.aerodesign.ca
	REVISION DATE:	
	SHEET 1 OF 1	Bell 407 Quick Release Cargo Basket Installation
	DCL946-1	

emailed

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
INSTALLATION DOCUMENTS		
94602	Quick Release Cargo Basket Installation	0 ✓
70202	Quick Release Mounting Provisions Installation	0 ✓
FMS702.90	Flight Manual Supplement	3 ✓
ICA698.90	Instructions for Continued Airworthiness	2 ✓
 FABRICATION DOCUMENTS		
DCL946-10	Document Control List for Cargo Basket Assembly	0 ✓
DCL698-2	Document Control List for Beams	4 ✓ <i>emailed</i>
APPROVAL:	ORIGINAL DATE: 27 October 2011	AERO DESIGN LTD. 2013 – 39 th Ave NE, Calgary, Alberta, T2E 6R7 Ph. (403) 250-8027 Fax. (403) 250-8333 www.aerodesign.ca
	REVISION DATE:	
	SHEET 1 OF 1	Bell 206L Series Quick Release Cargo Basket Installation
	DCL946-2	

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
FABRICATION DOCUMENTS		
94610	Cargo Basket Assembly	0
94611	Basket Body Assembly	0
94612	Basket Lid Assembly	0
94620	Basket Components - Hoop	0 ✓
94621	Basket Components - Brace	0
94627	Basket Components - Placard	0
94520	Basket Components - Hoop	0 ✓
94521	Basket Components - Forward Hoop	0 ✓
94522	Basket Components - Aft Hoop	0 ✓
69823	Basket Components - Lugs	1 ✓
49215	Basket Components - Spacer	0 ✓
49216	Basket Components - Spacer	0 ✓
84255	Handle Assembly	1
84261	Handle Bar Assembly	1
84262	Handle Bracket Assembly	1
84265	Handle Lever	1
84267	Handle Bracket	0
84272	Bushing	1
36273	Lid Bracket	1
36274	Bushing	2 ✓
36275	Bushing	3
36277	Handle Bar	0
36278	Spring	1
36280	Brace	2
ENGINEERING DOCUMENTS		
ER946.01	Engineering Report	0 ✓
FTP945.03	Flight Test Plan and Report	1 ✓
ER842.01	Engineering Report	0 ✓
APPROVAL:	ORIGINAL DATE: 27 October 2011	AERO DESIGN LTD. 2013 – 39 th Ave NE, Calgary, Alberta, T2E 6R7 Ph. (403) 250-8027 Fax. (403) 250-8333 www.aerodesign.ca
	REVISION DATE:	
	SHEET 1 OF 1	Bell 206L Series, 407 Quick Release Cargo Basket Fabrication
	<div> <div>DCL946-10</div> <div>Rev.</div> <div>0</div> </div>	

CONFORMITY INSPECTION RECORD

Applicant Aero Design Ltd.	Aeronautical Product				Title of Change Cargo Basket Installation
	Make	Model	Serial No.	Registration	
	Bell	206L Series / 407			
Drawing No.	Applicant's Inspector Signature Date		T.C. Inspection Signature Date		Findings
94601	<i>[Signature]</i> Nov 03/11				
70102	<i>[Signature]</i> NP00310				
60602	<i>Previously installed</i> <i>[Signature]</i> Nov 03/11				

APPLICANT'S ATTESTATION

I hereby confirm that the prototype installation for the subject

- ☒ MODIFICATION,
☐ REPAIR,
☐ TSO/AP-TC ARTICLE

is in conformity with the applicable installation drawing(s) listed above
and that necessary ground tests have been carried out.
[Please check (✓) the applicable box.]

Additional Information:

Signature: *[Signature]*

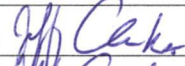





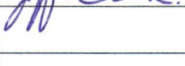

TC INSPECTION

- ☐ ACCEPTABLE
☐ UNACCEPTABLE

Remarks:

Signature: _____

CONFORMITY INSPECTION RECORD

Applicant Aero Design Ltd.	Aeronautical Product				Title of Change Cargo Basket Installation (946 Configuration)
	Make Bell	Model 206L Series / 407	Serial No.	Registration	
Drawing No.	Applicant's Inspector Signature Date		T.C. Inspection Signature Date		Findings
✓ 94610	 31 OCT 2011		 2011-11-23		
✓ 94611			 2011-11-23		
✓ 94612			 2011-11-23		
✓ PD946			 2011-11-23		

APPLICANT'S ATTESTATION

I hereby confirm that the prototype installation for the subject

☒ MODIFICATION,

☐ REPAIR,

☐ TSO/AP-TC ARTICLE

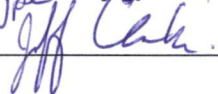
is in conformity with the applicable installation drawing(s) listed above
and that necessary ground tests have been carried out.

[Please check (✓) the applicable box.]

Additional Information:

PD 946 Details prototype discrepancies from production drawing
Gas Shock prototype 70472 installed.

Signature: _____



TC INSPECTION

☒ ACCEPTABLE

☐ UNACCEPTABLE

Remarks:

Signature: _____

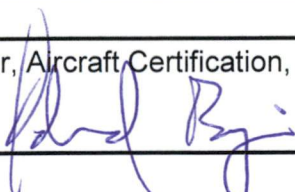


STAFF INSTRUCTION 513-008

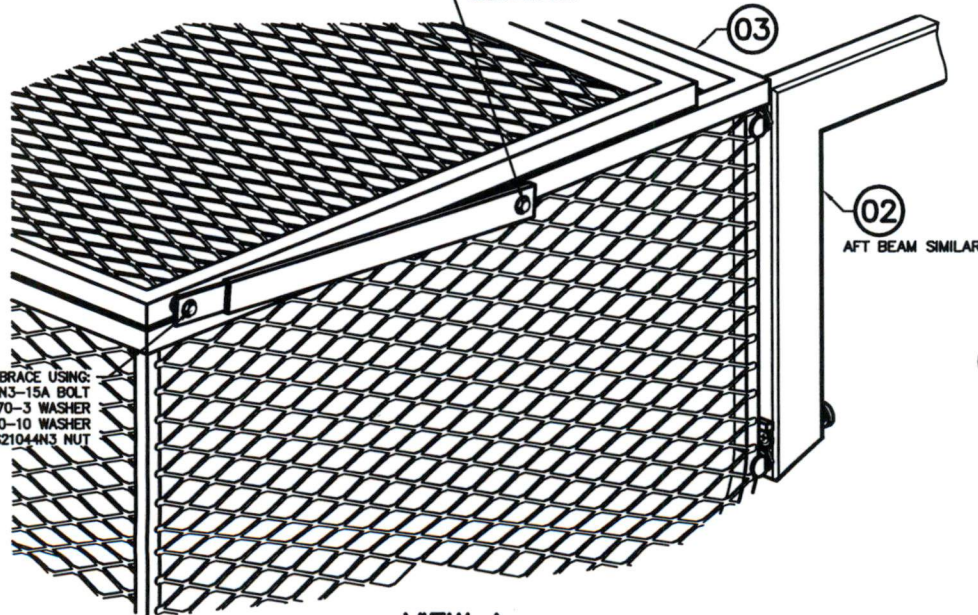
Flight Test Division Support of Regional Flight Test Activities

Appendix A – Statement of Suitability for Flight Test

Aircraft Type/Model	Bell 407
Registration	
Serial Number	
Description of Design Change(s)	Installation of AERO Design Ltd. Quick Release Cargo Basket
Design Drawings	94601, 94610, 94611, 94612

Statement of Suitability for Flight Test	
This is to certify that I have reviewed the subject design change and that I have reasonable assurance that compliance could be found with all applicable design requirements, except for those requirements that will be substantiated by flight-testing. I consider the aircraft to be safe for flight.	
Regional Engineer, Aircraft Certification, or Authorized Person 	Date 31 OCT 2011

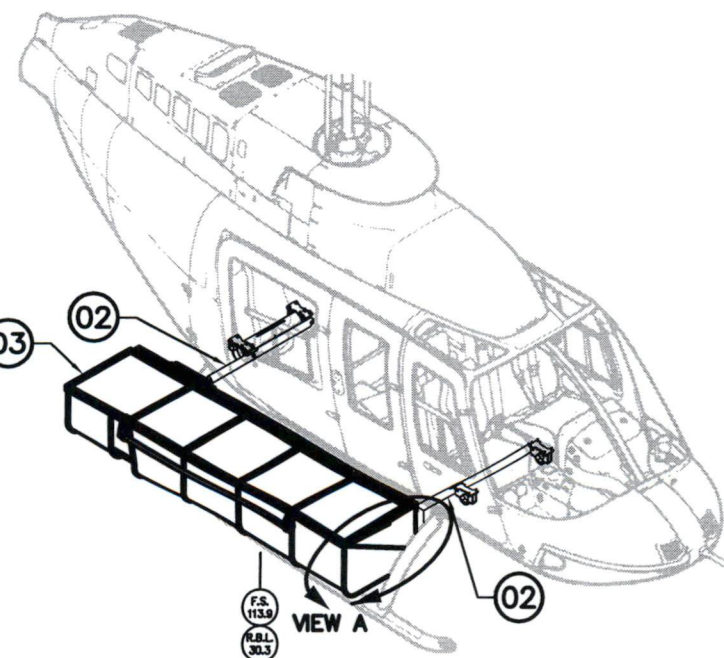
IF NECESSARY, INSTALL LID BRACE USING:
AN3-17A BOLT
AN970-3 WASHER
AN960-10 WASHER
MS21044N3 NUT



VIEW A

TYPICAL FORE AND AFT

IF NECESSARY, INSTALL LID BRACE USING:
AN3-15A BOLT
AN970-3 WASHER
AN960-10 WASHER
MS21044N3 NUT



01 INSTALLATION

1	94510-01	03	CARGO BASKET ASSEMBLY
1	70102-01	02	PROVISIONS INSTALLATION
	94501-01	01	INSTALLATION
01	PART NO.	ITEM	DESCRIPTION
QTY.	LIST OF MATERIALS		

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APPROVALS	DATE
DRAWN: JEFF CLARKE	23 OCT 2011
CHECKED: E. BURGOIN	

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DIMENSIONS ARE IN INCHES.
TOLERANCES ON:
DECIMALS ANGLES
X.XXX ± 0.010 $\pm 1/2^\circ$
X.XX ± 0.03
X.X ± 0.1

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BELL 407 QUICK RELEASE CARGO BASKET INSTALLATION			
NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 1 OF 2	A4	94601	0

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	CREATED FROM 70101, REV. 3		

NOTES:

- EXTERNAL ATTACHMENT PROVISIONS INSTALLED IN ACCORDANCE WITH DRAWING 60602 IS MANDATORY PREREQUISITE FOR THIS INSTALLATION.
QUICK RELEASE MOUNTING PROVISIONS INSTALLED IN ACCORDANCE WITH DRAWING 70102 IS MANDATORY PREREQUISITE FOR THIS INSTALLATION.
- HIGH SKID GEAR INSTALLATION IS MANDATORY PREREQUISITE FOR THIS INSTALLATION.
- SEE FLIGHT MANUAL SUPPLEMENT, FMS701.90, FOR LIMITATIONS ON HELICOPTER OPERATIONS WITH CARGO BASKET INSTALLED.
- SEE INSTRUCTIONS FOR CONTINUED AIRWORTHINESS, ICA698.90, FOR MAINTENANCE INFORMATION.

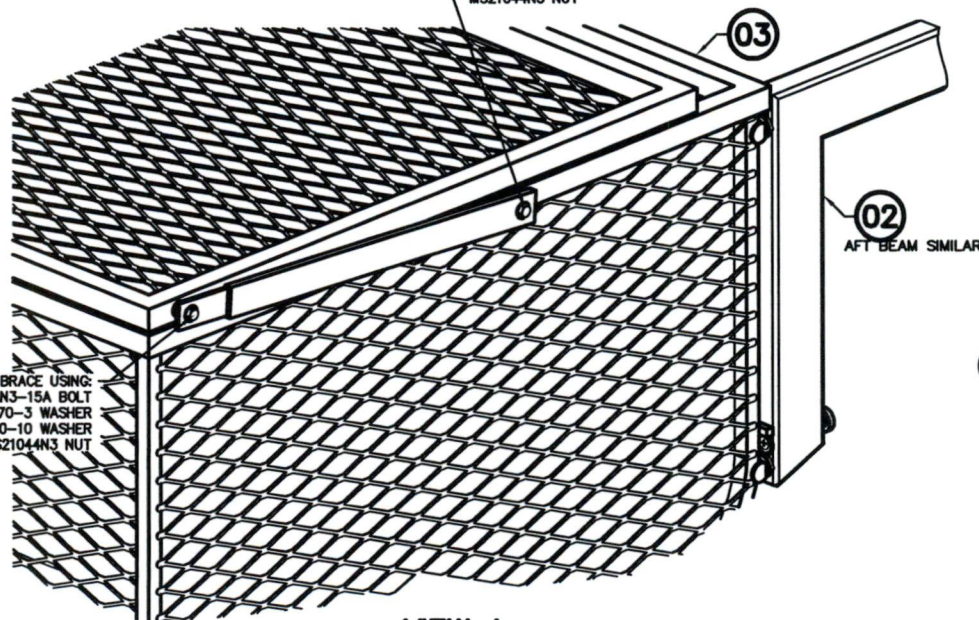
WEIGHT AND BALANCE

ITEM	DESCRIPTION	WEIGHT (LB)	LONGITUDINAL		LATERAL	
			ARM (IN)	MOMENT (LB-IN)	ARM (IN)	MOMENT (LB-IN)
01	CARGO BASKET INSTALLATION (CARGO BASKET AND MOUNTING PROVISIONS)	86.1	120.8	10400	33.6	2896
	CARGO (CENTRE OF BASKET)	300 MAX	125.0	37500	40.0	12000

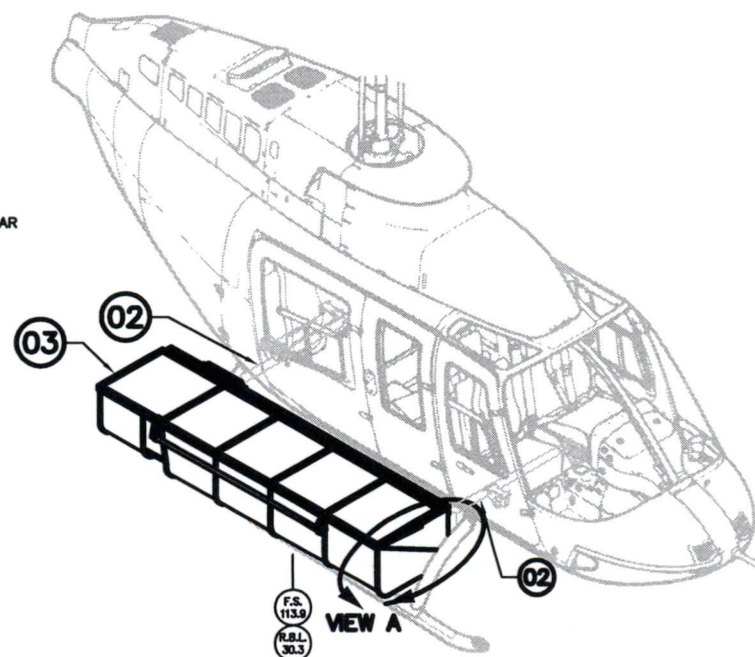
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DRAWN: JEFF CLARKE	23 OCT 2011				
CHECKED: E. BURGOIN					
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON: DECIMALS ANGLES X.XXX ±0.010 ±1/2" X.XX ±0.03 X.X ±0.1		BELL 407 QUICK RELEASE CARGO BASKET INSTALLATION			
		NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
		SHEET 2 OF 2	A4	94601	0

IF NECESSARY, INSTALL LID BRACE USING:
AN3-17A BOLT
AN970-3 WASHER
AN960-10 WASHER
MS21044N3 NUT

IF NECESSARY, INSTALL LID BRACE USING:
AN3-15A BOLT
AN970-3 WASHER
AN960-10 WASHER
MS21044N3 NUT



VIEW A
TYPICAL FORE AND AFT



(01) INSTALLATION

1	94610-01	03	CARGO BASKET ASSEMBLY
1	70202-01	02	PROVISIONS INSTALLATION
	94602-01	01	INSTALLATION
01	PART NO.	ITEM	DESCRIPTION
QTY.	LIST OF MATERIALS		

APPROVALS	DATE
DRAWN: JEFF CLARKE	23 OCT 2011
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DECIMALS ANGLES
X.XXX ± 0.010 $\pm 1/2^\circ$
X.XX ± 0.03
X.X ± 0.1

BELL 206L SERIES QUICK RELEASE CARGO BASKET INSTALLATION				
NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.	
SHEET 1 OF 2	A4	94602	0	

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	CREATED FROM 70201, REV. 3		

NOTES:

- EXTERNAL ATTACHMENT PROVISIONS INSTALLED IN ACCORDANCE WITH DRAWING 49301 IS MANDATORY PREREQUISITE FOR THIS INSTALLATION.
QUICK RELEASE MOUNTING PROVISIONS INSTALLED IN ACCORDANCE WITH DRAWING 70202 IS MANDATORY PREREQUISITE FOR THIS INSTALLATION.
- HIGH SKID GEAR INSTALLATION IS MANDATORY PREREQUISITE FOR THIS INSTALLATION.
- SEE FLIGHT MANUAL SUPPLEMENT, FMS702.90, FOR LIMITATIONS ON HELICOPTER OPERATIONS WITH CARGO BASKET INSTALLED.
- SEE INSTRUCTIONS FOR CONTINUED AIRWORTHINESS, ICA698.90, FOR MAINTENANCE INFORMATION.

WEIGHT AND BALANCE

ITEM	DESCRIPTION	WEIGHT (LB)	LONGITUDINAL		LATERAL	
			ARM (IN)	MOMENT (LB-IN)	ARM (IN)	MOMENT (LB-IN)
01	CARGO BASKET INSTALLATION (CARGO BASKET AND MOUNTING PROVISIONS)	89.0	122.0	10856	32.5	2896
	CARGO (CENTRE OF BASKET)	300 MAX	125.0	37500	40.0	12000

APPROVALS		DATE		AERO DESIGN LTD. CONSULTING ENGINEERS, TRANSPORT CANADA APPROVALS, DAR 290M 2013 - 39TH AVENUE N.E., CALGARY, ALBERTA, CANADA, T2E 6R7 tel: (403) 250-8027 fax: (403) 250-8333 www.aerodesign.ca			
DRAWN: JEFF CLARKE		23 OCT 2011					
CHECKED: E. BURGOIN							
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON: DECIMALS ANGLES X.XXX ±0.010 ±1/2° X.XX ±0.03 X.X ±0.1				BELL 206L SERIES QUICK RELEASE CARGO BASKET INSTALLATION			
NOT TO SCALE		DWG. SIZE	DWG. NO.	REV.			
SHEET 2 OF 2		A4	94602	0			

AERO Design Ltd.

ENGINEERING REPORT

ER946.01

BELL 206L SERIES, 407

**QUICK RELEASE CARGO BASKET
LARGER CROSS SECTION, EXTENDED LENGTH**

Prepared by: Jeff Clarke, CET

Approved by: E. Burgoin, P.Eng., DAR 290M

Revision 0, 14 October 2011

AERO Design Ltd.
Engineering Consultants
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Fax: (403) 250-8333

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1.0 INTRODUCTION

Operators of the existing AERO Design Quick Release Cargo Basket are requesting a basket with greater capacity while maintaining the existing mounting location. A new basket has been fabricated that is the same length as the original basket, but is 1" taller and 3.25" wider. The ground clearance from the original configuration has been maintained. This basket is the same as the 945 configuration, but the length is extended out the back for an overall length of 8 feet.

In order to remain competitive, the load capacity of the basket is increased to 300 lbs. This report will demonstrate that the existing beams are capable of supporting a 300 lb cargo load with the larger basket.

2.0 REFERENCE TEXT

AERO Design Ltd. Reports ER698.01 ER698.02, TP698.03, ER698.04, ER698.06, ER842.01
AERO Design Ltd. Drawings 69830, 69831, 94611

3.0 BASIS OF CERTIFICATION

TCDS H-92 (Highest of Bell 206L series and 407):

FAR part 27, dated October 2, 1964 Amendment 27-1 through 27-30; Paragraph 27.561(b)(3) at Amdt 27-24; Section 27.563 at Amdt. 27-25; Section 27.785 at Amdt 27-24; Section 27.1093 at amendment 27-8; and Section 27.173 and 27.175 at amendment 27-1.

Exemptions to FAR 27 are the deletion of sections: 27.562, 27.1195, and 27.952(b)(1).

This report demonstrates that the installation of the Quick Release Cargo Basket (945 configuration) complies with the original basis of certification.

4.0 APPLICABILITY OF AIRWORTHINESS DIRECTIVES

Airworthiness Directives applicable to the Bell 206L Series and 407 were reviewed, and none were found to affect this project.

5.0 LOADS

BELL 407 HELICOPTER LOAD FACTORS, FAR 27:

FAR 27.561(b)(3)

Ultimate Upward Emergency Landing Load Factor:	$n_{e_up} := 1.5$
Ultimate Forward Emergency Landing Load Factor:	$n_{e_fwd} := 4.0$
Ultimate Sideward Emergency Landing Load Factor:	$n_{e_side} := 2.0$
Ultimate Downward Emergency Landing Load Factor:	$n_{e_down} := 4.0$

FAR 27.625 Fitting Factor (does not apply to articles being tested): $n_{ff} := 1.15$

FAR 27.303 Safety Factor: $n_{sf} := 1.5$

FAR 27.337(a)

Limit Positive Maneuvering LoadFactor: $n_{man} := 3.5$

$n_{man_ult} := n_{man} \cdot n_{sf}$ Ultimate Positive Maneuvering LoadFactor: $n_{man_ult} = 5.25$

Limit Negative Maneuvering LoadFactor: $n_{man_n} := -1.0$

$n_{man_neg_u} := n_{man_n} \cdot n_{sf}$ Ultimate Negative Maneuvering LoadFactor: $n_{man_neg_u} = -1.5$

CRITICAL ULTIMATE LOAD FACTORS:

Downward:	Ultimate Positive Maneuvering LoadFactor:	$n_{man_ult} = 5.25$
Forward:	Ultimate Forward Emergency Landing Load Factor:	$n_{e_fwd} = 4.00$
Sideward:	Ultimate Sideward Emergency Landing Load Factor:	$n_{e_side} = 2.00$
Upward:	Ultimate Upward Emergency Landing Load Factor:	$n_{e_up} = 1.50$

Note: The basket is mounted below and to one side of the cabin. Forward deflection or failure in the emergency landing condition does not endanger the occupants. Likewise, Sideward and Upward deflection or failure of the basket in the emergency landing condition do not endanger the occupants.

Sideward and Upward Load Factors are used in the tests to ensure that the lid of the basket does not open in flight.

5.1 Inertia Loads

The positive maneuvering load is the only critical condition.

$W_{\text{basket}} := 70 \text{ lbf}$ Weight of basket (including options, basic basket is less)

$W_{\text{cargo}} := 275 \text{ lbf}$ Weight of cargo (max)

$P_{\text{man_lim}} := (W_{\text{basket}} + W_{\text{cargo}}) \cdot n_{\text{man_lim}}$

$P_{\text{man_lim}} = 1208 \text{ lbf}$ Limit maneuvering load due to cargo and basket

$P_{\text{man_ult}} := P_{\text{man_lim}} \cdot n_{\text{sf}}$

$P_{\text{man_ult}} = 1811 \text{ lbf}$ Ultimate maneuvering load due to cargo and basket

$W_{\text{cargo}} := 300 \text{ lbf}$ Weight of cargo (max)

$P_{\text{man_lim}} := (W_{\text{basket}} + W_{\text{cargo}}) \cdot n_{\text{man_lim}}$

$P_{\text{man_lim}} = 1295 \text{ lbf}$ Limit maneuvering load due to cargo and basket

$P_{\text{man_ult}} := P_{\text{man_lim}} \cdot n_{\text{sf}}$

$P_{\text{man_ult}} = 1943 \text{ lbf}$ Ultimate maneuvering load due to cargo and basket

5.2 Drag Load

$l_{\text{basket}} := 75.75 \text{ in}$ Length of basket.

$w_{\text{basket}} := 25.5 \text{ in}$ Width of basket.

$h_{\text{basket}} := 18.25 \text{ in}$ Height of basket.

$A_f := 450 \text{ in}^2$ Frontal Area of basket.

$A_p := l_{\text{basket}} \cdot w_{\text{basket}}$

$A_p = 1932 \text{ in}^2$ Planar Area of basket.

$\frac{l_{\text{basket}}}{w_{\text{basket}}} = 3.0$ Fineness ratio of basket

$C_{Do} := 1.1$ Drag Coefficient of Basket, (overestimated)
(Ref. Hoerner, Fluid Dynamic Drag, Chapter 3
Figure 22).

$$\rho := 0.002378 \frac{\text{slug}}{\text{ft}^3}$$

Density of air at Sea Level.

$$V_{ne} := 140 \text{ knots}$$

Never-Exceed-Speed of Bell 407.
(Ref. Bell 407 Flight Manual.)

$$V_d := \frac{V_{ne}}{0.9}$$

$$V_d = 156 \text{ knots}$$

Design Dive Speed of Bell 407

$$P_{\text{drag_lim}} := \frac{\rho}{2} \cdot V_d^2 \cdot A_f \cdot C_{Do}$$

$$P_{\text{drag_lim}} = 282 \text{ lbf}$$

Limit Drag load on basket.

$$P_{\text{drag_ult}} := P_{\text{drag_lim}} \cdot n_{sf}$$

$$P_{\text{drag_ult}} = 423 \text{ lbf}$$

Ultimate Drag load on basket.

6.0 STRUCTURAL COMPLIANCE

Structural compliance is demonstrated by test. The entire cargo basket configuration is tested. A jig simulating the helicopter attachments was fabricated. A pair of quick release beams was fabricated in accordance with drawing 69830 and 69831. The beams were mounted on the jig, and a basket body fabricated in accordance with drawing 94611 was installed on the beams.

The maneuvering load is applied by stacking bags of lead shot (25 lbs each) evenly over the bottom of the basket. The drag load is applied by pulling on a piece of plywood spanning the front face of the basket with a come-along attached to a load cell.

6.1 Limit Maneuvering Load – 275 lbs Cargo

The lead shot required to apply the downward maneuvering load can be reduced by the weight of the basket body since it applies 1g down. The basket body weighs 42 lbs.

$$P_{\text{man_lim}} = 1208 \text{ lbf}$$

Limit maneuvering load due to cargo and basket

$$P_{\text{man_lim_test}} := P_{\text{man_lim}} - 42 \cdot \text{lbf}$$

$$P_{\text{man_lim_test}} = 1166 \text{ lbf}$$

Limit load for test

The basket was loaded with 47 bags of lead shot (1175 lbs total), and pulled 300 lbs.



Figure 6.1.1 – Limit Maneuvering Load – 275 lbs Cargo

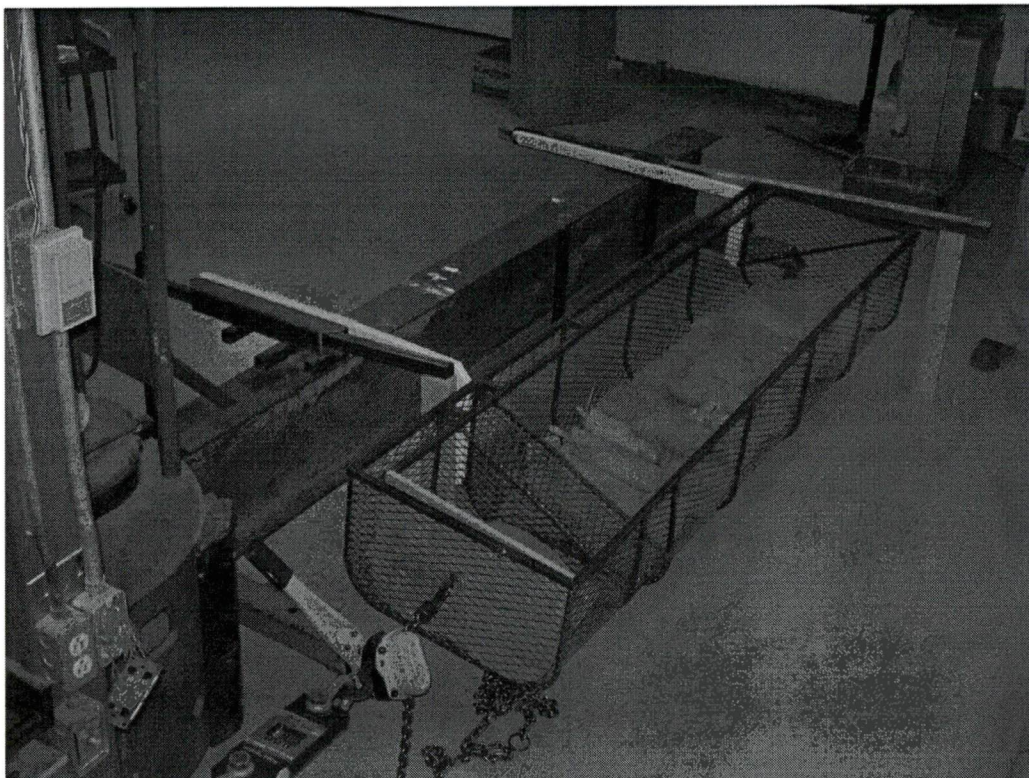


Figure 6.1.3 – Limit Maneuvering and Drag Load, 275 lbs Cargo

The loads were applied for more than 3 seconds. The loads were removed and the basket and beams checked for permanent deformation. There was no deformation found.

6.2 Limit Maneuvering Load – 300 lbs Cargo

The lead shot required to apply the downward maneuvering load can be reduced by the weight of the basket body since it applies 1g down. The basket body weighs 32 lbs.

$$P_{\text{man_lim}} = 1295\text{lbf} \quad \text{Limit maneuvering load due to cargo and basket}$$

$$P_{\text{man_lim_test}} := P_{\text{man_lim}} - 42\text{lbf}$$

$$P_{\text{man_lim_test}} = 1253\text{lbf} \quad \text{Limit load for test}$$

The basket was loaded with 51 bags of lead shot (1275 lbs), and pulled 300 lbs.



Figure 6.2.1 – Limit Maneuvering Load, 300 lbs Cargo

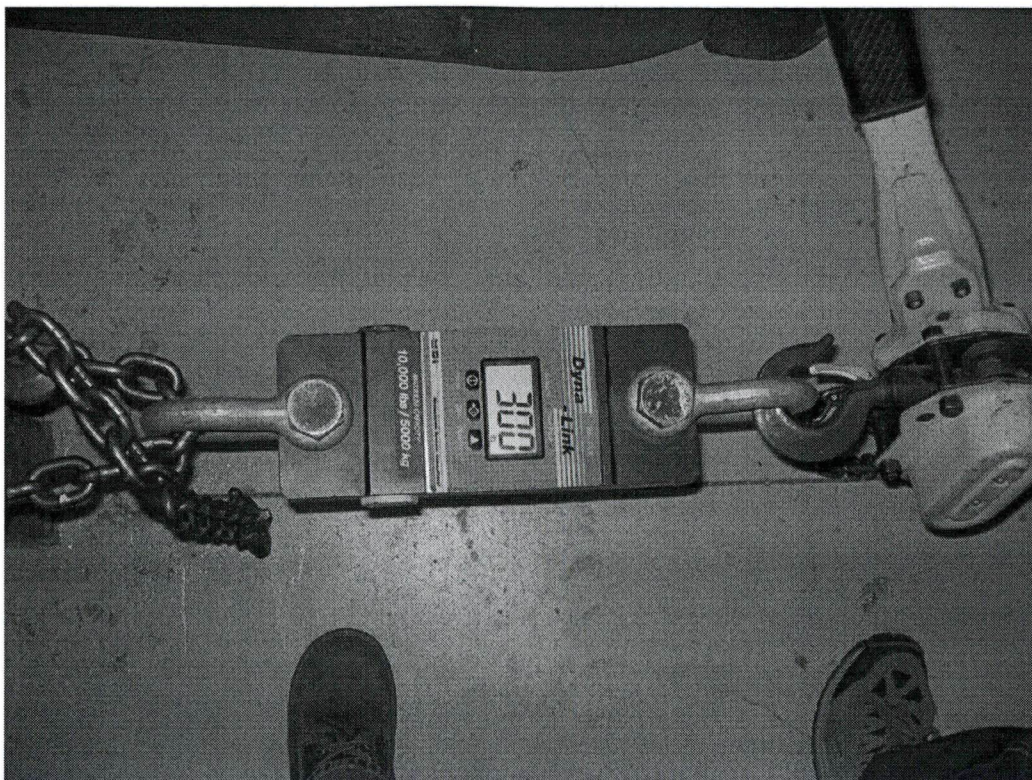


Figure 6.2.2 – Limit Drag Load

The loads were applied for more than 3 seconds. The loads were removed and the basket and beams checked for permanent deformation. There was none found.

6.3 Ultimate Maneuvering Load – 275 lbs Cargo

The lead shot required to apply the downward maneuvering load can be reduced by the weight of the basket body since it applies 1g down. The basket body weighs 32 lbs.

$$P_{\text{man_ult}} = 1811\text{ lbf} \quad \text{Ultimate maneuvering load due to cargo and basket}$$

$$P_{\text{man_ult_test}} := P_{\text{man_ult}} - 42\text{ lbf}$$

$$P_{\text{man_ult_test}} = 1769\text{ lbf} \quad \text{Ultimate load for test}$$

The basket was loaded with 71 bags of lead shot (1775 lbs), and pulled 430 lbs.

The basket and beams sustained the ultimate maneuvering and drag loads for more than 3 seconds without failure. Testing continued to ultimate load with 300 lbs cargo.

6.4 Ultimate Maneuvering Load – 300 lbs Cargo

The lead shot required to apply the downward maneuvering load can be reduced by the weight of the basket body since it applies 1g down. The basket body weighs 32 lbs.

$$P_{\text{man_ult}} = 1943\text{lbf}$$

Ultimate maneuvering load due to cargo and basket

$$P_{\text{man_ult_test}} := P_{\text{man_ult}} - 42\text{lbf}$$

$$P_{\text{man_ult_test}} = 1901\text{lbf}$$

Ultimate load for test

The total load required is 77 bags of lead shot (1925 lbs). Loading continued from the previous condition (71 bags, 430 lbs drag).



Figure 6.4.1 – Ultimate Maneuvering Load, 300 lbs Cargo

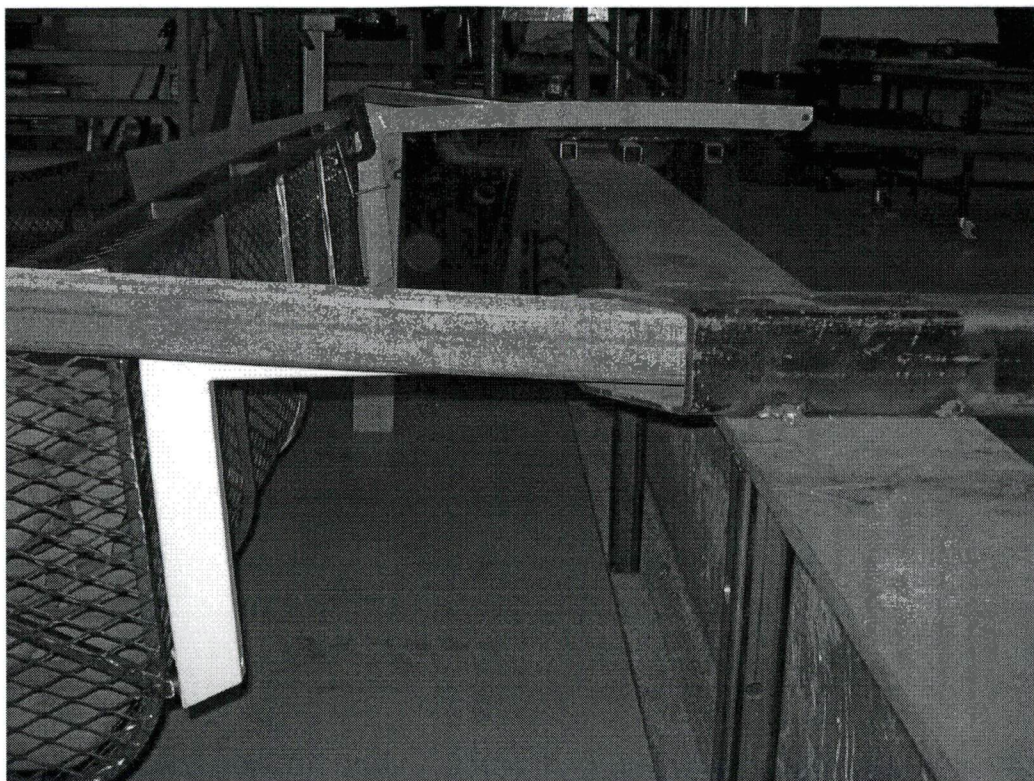


Figure 6.4.2 – Ultimate Maneuvering Load, 300 lbs Cargo

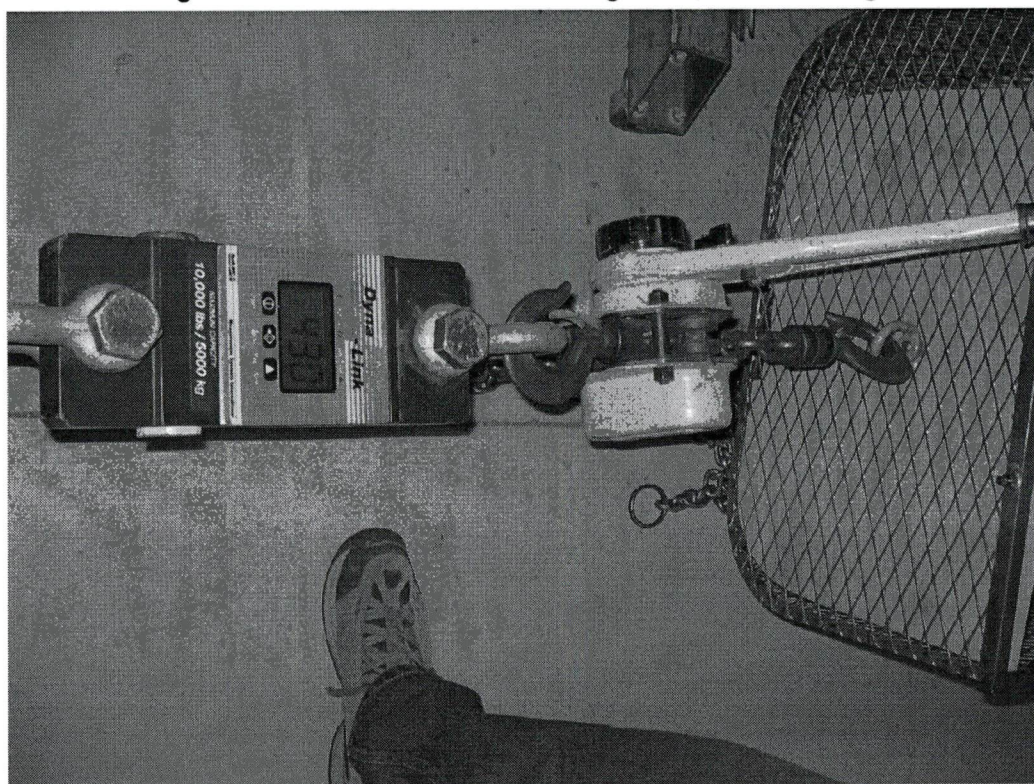


Figure 6.4.3 – Ultimate Drag Load

The basket and beams sustained the ultimate maneuvering and drag loads for more than 3 seconds without failure. The basket and beams were inspected after removal of the loads. The

basket showed no signs of permanent deformation. Both beams were slightly deformed, the aft beam was worst, bent down about 1/8" at the outboard end.

The quick release cargo basket (946 configuration) and beams are acceptable for a cargo load of 300 lbs.

6.5 Forward Emergency Landing Condition

The basket is located below the cabin. Forward deflection of the basket does not endanger the occupants in a crash.

6.6 Sideward Emergency Landing Condition

Sideward deflection of the basket does not endanger the occupants. The basket lid must remain closed in the sideward loading condition. The handle has been demonstrated to remain closed under 2g sideward load, reference Engineering Report ER842.01.

6.7 Upward Emergency Landing Condition

Upward deflection of the basket does not endanger the occupants. The basket lid must remain closed in the upward loading condition. The handle system has been demonstrated to remain closed under 450 lbs upward load (1.5g x 300 lbs), reference Engineering Report ER842.01.

7.0 FAR 27.1401 – ANTI-COLLISION LIGHT

Light located at FS 396, WL 130 on vertical fin. Cargo basket installation has no significant effect on visibility of anticollision light.